

**Table Suplement 1** Enrichment Factor (EF) and Anthropogenic Factor (AF) description of contamination level (Hakanson, 1980; Wang et al., 2012, Hurley et al., 2017)

<b>EF value</b>	<b>Level of contamination</b>	<b>AF value</b>	<b>Level of contamination</b>
EF<1	No enrichment	AF<1	Low contamination
1≤EF<3	Minor enrichment	1≤AF<3	Moderate
3≤EF<5	Moderate enrichment	3≤AF<6	Considerable
5≤EF<10	Moderately severe enrichment	AF≥6	Very high
10≤EF<25	Severe enrichment		
25≤EF<50	Very severe enrichment		
EF≥50	Ultra-high enrichment		

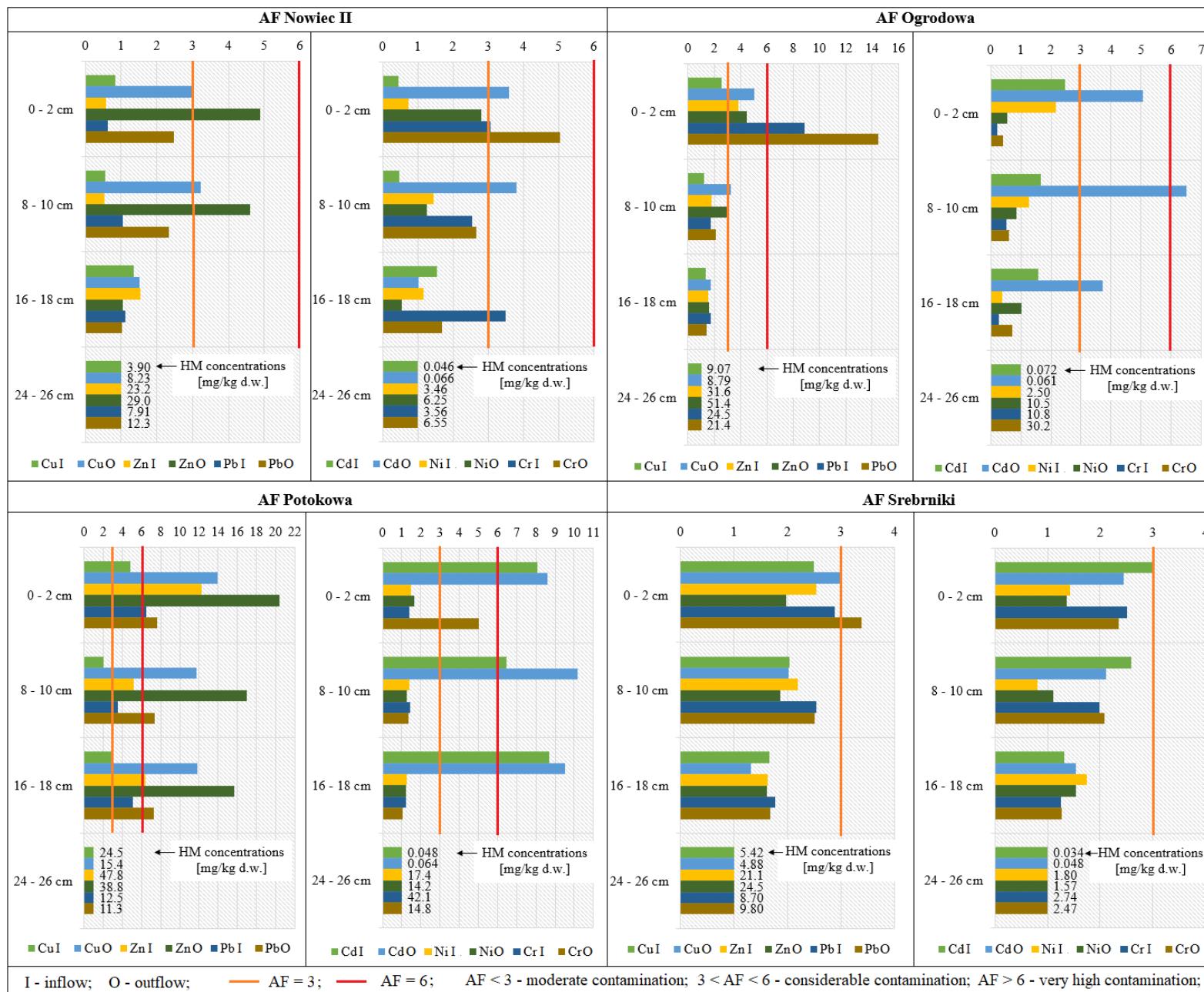
**Table Supplement 2** Average HMs concentrations [mg/kg d.w.] in samples of core sediments in analysed RTs on Strzyza Stream.

Retention tank	Layer of core [cm]	Average heavy metal concentrations in core of bottom sediments [mg/kg d.w.]													
		Cu		Zn		Pb		Cd		Ni		Cr		Fe	
		Inflow I	Outflow O	Inflow I	Outflow O	Inflow I	Outflow O	Inflow I	Outflow O	Inflow I	Outflow O	Inflow I	Outflow O	Inflow I	Outflow O
Nowiec II	0 - 2	3.24	24.6	13.6	141	4.91	30.6	0.020	0.236	2.55	17.5	10.9	33.0	3993	57582
		± 0.03	± 0.0	± 0.1	± 1	± 0.11	± 0.3	± 0.008	± 0.008	± 0.08	± 0.1	± 0.8	± 0.7	± 2	± 21
	8 - 10	2.13	26.6	12.5	133	8.34	28.8	0.021	0.249	4.99	7.80	9.08	17.4	3994	56501
		± 0.01	± 0.1	± 0.2	± 2	± 0.42	± 0.4	± 0.003	± 0.004	± 0.09	± 0.06	± 0.05	± 0.8	± 3	± 15
	16 - 18	5.32	12.5	35.6	30.3	8.85	12.7	0.070	0.067	4.05	3.45	12.4	11.0	12675 ± 7	14680
	24 - 26	± 0.05	± 0.0	± 0.3	± 0.7	± 0.21	± 0.2	± 0.007	± 0.005	± 0.07	± 0.05	± 0.7	± 0.5	± 7	
		3.90	8.23	23.2	29.1	7.90	12.3	0.045	0.065	3.46	6.25	3.56	6.55	9720	9742
Ogrodowa	0 - 2	± 0.01	± 0.10	± 0.1	± 0.2	± 0.26	± 0.1	± 0.010	± 0.007	± 0.05	± 0.08	± 0.04	± 0.06	± 6	± 4
		23.1	44.4	121	228	<b>217</b>	<b>309</b>	0.178	0.307	5.41	5.80	2.45	12.4	26391 ± 1	31150
	8 - 10	± 0.2	± 0.2	± 2	± 1	± 3	± 4	± 0.011	± 0.001	± 0.04	± 0.02	± 0.05	± 0.7	± 7	
		11.3	28.5	56.5	150	42.0	45.8	0.120	0.397	3.22	8.90	5.80	18.7	16047 ± 3	28259
	16 - 18	± 0.1	± 0.2	± 1.2	± 2	± 0.8	± 0.7	± 0.008	± 0.004	± 0.08	± 0.02	± 0.04	± 1.0		
	24 - 26	12.1	15.0	48.4	84.0	42.0	29.7	0.114	0.227	0.98	10.7	3.11	22.1	15584 ± 6	16384
		± 0.1	± 0.1	± 0.7	± 0.8	± 0.7	± 0.5	± 0.002	± 0.003	± 0.11	± 0.4	± 0.03	± 0.7	± 9	
Potokowa	0 - 2	9.07	8.79	31.6	51.4	24.5	21.4	0.072	0.061	2.50	10.5	10.8	30.2	22344 ± 4	21156
		± 0.15	± 0.09	± 0.5	± 1.4	± 0.5	± 0.7	± 0.001	± 0.001	± 0.06	± 0.3	± 0.7	± 1.3	± 11	
	8 - 10	<b>119</b>	<b>216</b>	<b>584</b>	<b>791</b>	81.1	87.0	0.388	0.552	<b>25.8</b>	<b>23.4</b>	58.7	<b>74.5</b>	25401 ± 3	50480
		± 2	± 2	± 4	± 9	± 1.4	± 2.0	± 0.001	± 0.003	± 0.4	± 0.4	± 1.1	± 1.7	± 12	
	16 - 18	50.6	182	247	658	44.7	84.2	0.309	<b>0.654</b>	24.5	17.9	<b>61.2</b>	19.8	14979 ± 2	49031
	24 - 26	68.4	183	307	607	63.6	83.2	<b>0.417</b>	0.610	22.1	17.4	52.1	15.4	31701 ± 8	47470
		± 0.7	± 2	± 2	± 2	± 1.2	± 1.2	± 0.002	± 0.004	± 0.8	± 0.1	± 0.8	± 0.5	± 8	
Srebrniki	0 - 2	24.5	15.4	47.8	38.8	12.5	11.3	0.048	0.064	17.4	14.2	42.1	14.8	9478	12000
		± 0.8	± 0.7	± 1.6	± 0.4	± 0.4	± 0.1	± 0.004	± 0.003	± 0.2	± 0.2	± 0.8	± 0.4	± 3	± 5
	8 - 10	13.4	14.5	53.6	48.7	25.1	33.1	0.101	0.117	2.58	2.14	6.89	5.79	21411 ± 5	25897
		± 0.3	± 0.9	± 0.9	± 0.8	± 0.8	± 0.3	± 0.003	± 0.004	± 0.02	± 0.01	± 0.05	± 0.06	± 7	
	16 - 18	11.0	9.88	46.4	45.8	22.1	24.5	0.088	0.101	1.45	1.75	5.45	5.12	18274 ± 3	19789
	24 - 26	8.98	6.42	34.5	39.8	15.4	16.4	0.045	0.074	3.14	2.41	3.45	3.12	15486 ± 3	14887
		± 0.11	± 0.14	± 0.5	± 0.8	± 0.6	± 0.1	± 0.011	± 0.012	± 0.04	± 0.01	± 0.02	± 0.01	± 3	

**Bold** - the highest HM concentrations obtained

**Table Supplement 3** Results of sequential extraction analysis performed for top layer of bottom sediments in Nowiec II and Potokowa RTs on Strzyza Stream.

Retention tank	Measurement point	Fractions of sequential extraction analysis								Percentage of each fraction in the analyzed sample [%]				
		I	SD	II	SD	III	SD	IV	SD	Total of I-IV	I	II	III	IV
		[mg/kg d.w.]								Zn				
Nowiec II	I	0.862	0.026	0.278	0.008	0.478	0.016	11.3	0.3	12.9	8	3	6	83
	O	0.867	0.026	29.4	0.847	55.6	1.8	50.9	1.4	137	1	22	41	36
Potokowa	I	6.04	0.18	28.0	0.806	320	11	224	6	578	1	6	55	38
	O	6.20	0.19	31.0	0.892	401	13	337	9	775	1	4	52	43
Cu														
Nowiec II	I	<0.05	-	1.40	0.042	1.42	0.071	0.367	0.020	3.19	0	44	45	11
	O	<0.05	-	<0.05	-	<0.05	-	24.6	1.4	24.6	0	0	0	100
Potokowa	I	<0.05	-	<0.05	-	<0.05	-	118	6	118	<1	<1	<1	99
	O	<0.05	-	<0.05	-	52.1	2.6	162	9	214	<1	<1	24	75
Pb														
Nowiec II	I	<0.15	-	<0.15	-	0.198	0.010	4.69	0.21	4.9	0	0	4	96
	O	<0.15	-	<0.15	-	9.15	0.46	21.2	0.9	30.4	<1	<1	30	69
Potokowa	I	<0.15	-	<0.15	-	8.88	0.44	70.4	3.1	79.2	<1	<1	11	87
	O	<0.15	-	<0.15	-	6.58	0.33	79.9	3.5	86.5	0	0	8	92
Ni														
Nowiec II	I	<0.7	-	<0.7	-	<0.7	-	2.45	0.08	2.45	<1	<1	<1	97
	O	<0.7	-	<0.7	-	4.36	0.19	12.8	0.4	17.2	<1	<1	25	73
Potokowa	I	<0.7	-	<0.7	-	3.41	0.15	21.1	0.7	24.5	<1	<1	15	83
	O	0.991	0.050	<0.7	-	3.36	0.15	18.5	0.6	22.9	<1	<1	17	81
Cr														
Nowiec II	I	<1.5	-	<1.5	-	<1.5	-	10.8	0.4	11.0	<1	<1	<1	99
	O	<1.5	-	<1.5	-	2.30	0.08	30.2	1.2	32.5	<1	<1	7	92
Potokowa	I	<1.5	-	<1.5	-	5.0	0.2	51.6	2.1	56.6	<1	<1	10	88
	O	<1.5	-	<1.5	-	12.0	0.4	63.3	2.6	75.3	0	0	15	85
Cd														
Nowiec II	I	0.006	0.000	0.005	0.000	0.001	0.000	0.008	0.000	0.019	30	25	4	41
	O	0.025	0.001	0.077	0.002	0.130	0.003	0.005	0.000	0.227	10	33	56	1
Potokowa	I	0.035	0.001	0.033	0.001	0.187	0.004	0.133	0.004	0.369	9	8	50	33
	O	0.047	0.001	0.041	0.001	0.267	0.006	0.196	0.006	0.558	9	7	48	36



**Figure Supplement 1** Anthropogenic Factor of vertical profile of sediments deposited in RTs on Strzyza Stream